

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
28 August 2003 (28.08.2003)

PCT

(10) International Publication Number
WO 2003/070007 A3

(51) International Patent Classification⁷: A23J 3/16, (81) Designated States (national): AE, AG, AL, AM, AT, AU, 3/26, A21D 2/36, 2/26, A23L 1/305 AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DB (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number: PCT/IB2003/000672

(22) International Filing Date: 24 February 2003 (24.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 02004075:4 23 February 2002 (23.02.2002) EP

(71) Applicant (for all designated States except US): NUTRI PHARMA DANMARK HOLDING A/S [DK/DK]; Kongens Nytorv 22, 2nd, DK-1050 Copenhagen K (DK).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HØIE, Lars, Henrik [NO/GB]; 8 Blenheim Road, St. Johns Wood, London NW8 0LU (GB). NADLAND, Karl, Johan [NO/NO]; Abyv. 9, Kjellstad, 3400 Lier (NO).

(74) Agent: BUDDE, SCHOU & OSTENFELD A/S; Vester Søgade 10, DK-1601 Copenhagen V (DK).

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 31 December 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 2003/070007 A3

(54) Title: METHOD FOR MANUFACTURING BEADS CONTAINING EXOGENOUS SOY PROTEIN

(57) Abstract: The present invention provides protein-containing particles with a high eating quality characterised by having a high content of exogenous protein and optionally of phospholipids and/or of fibres. The present invention also provides a method for manufacturing protein-containing particles with a high eating quality characterised by having a high content of exogenous proteins and optionally of phospholipids and of fibres. The present invention further provides soy protein-containing beads, methods for the manufacture of same and bread comprising soy protein-containing beads and methods for the manufacture of same.

INTERNATIONAL SEARCH REPORT

Internat	Application No
PCT/IB 03/00672	

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A23J3/16 A23J3/26 A21D2/36 A21D2/26 A23L1/305

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A23J A21D A23L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)
EPO-Internal, FSTA, BIOSIS, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TSEN C C ET AL: "Extruded soy products from whole and dehulled soybeans cooked at various temperatures for bread and cookie fortifications." CEREAL FOODS WORLD 1975 DEP. OF GRAIN SCI. & IND., KANSAS STATE UNIV., MANHATTAN, KANSAS 66506, USA, vol. 20, no. 9, pages 413-418, XP008023984 cited in the application the whole document	1,4,19, 20,38-40
X	GB 1 522 439 A (SPECIAL FOOD CORP) 23 August 1978 (1978-08-23) cited in the application claims 1-26	1,4,19, 20,38,39

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the International search	Date of mailing of the International search report
31 October 2003	07/11/2003

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

De Jong, E

INTERNATIONAL SEARCH REPORT

Internat Application No
PCT/IB 03/00672

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/019734 A1 (GILBERTSON DENNIS B ET AL) 6 September 2001 (2001-09-05) page 2, paragraphs 25,26 page 3, paragraph 32 page 4, paragraph 51	1,4,19, 20,38,39
X	US 2001/055642 A1 (COHEN DEBORAH W) 27 December 2001 (2001-12-27)	1,19,38
A	page 1, paragraph 9	20-25, 39-82
	page 2, paragraph 16; claims 1-29	
X	EP 1 129 626 A (PROTEIN TECH INT) 5 September 2001 (2001-09-05) page 5, paragraphs 31,32	75,76, 81,82
A	WO 00 30663 A (HOIE LARS HENRIK ;NUTRI PHARMA AS (NO)) 2 June 2000 (2000-06-02) cited in the application page 33; claims 1-58 page 38	19-25, 38-82
A	SA SOUZA DE E ET AL: "EIWEISS- UND BALLASTSTOFFANREICHERUNG BEI ARGENTINISCHEM WEIZENMEHL" GETREIDE MEHL UND BROT, BOCHUM, DE, vol. 35, no. 6, 1981, pages 150-153, XP008019007 ISSN: 0367-4177 the whole document	19-25, 38-82
A	ZIMMERMANN R ET AL: "UEBER FUNKTIONELLE EIGENSCHAFTEN VON SONNENBLUMENPROTEINEN IN WEIZENTEIG 4. MITT VERGLEICHENDE UNTERSUCHUNGEN ZUR WIRKUNG EINER VORQUELLUNG VON SONNENBLUMEN- UND SOJA-PROTEINISOLATEN BEI VERSCHIEDENEN PH-WERTEN" DIE NAHRUNG, VCH VERLAGSGESELLSCHAFT, WEINHEIM, XX, vol. 28, no. 9, 1984, pages 975-981, XP008019004 ISSN: 0027-769X the whole document	48-50

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/IB 03/00672**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 1-18 (partial) because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-18 (partial)

Present claims 1-80 relate to a large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a part of the products claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the products related to soy protein containing particles or beads, as mentioned in claims 19-25 and 38-82 and throughout the description, e.g. p.1 1.4, p.3 1.20-p.5 1.5 etc.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Internat	Application No
PCT/1b 03/00672	

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1522439	A 23-08-1978	DE 2606546 A1 AT 347371 B AT 526676 A BE 851557 A1 CA 1113303 A1 CH 602017 A5 EG 13899 A FR 2341273 A1 IT 1115941 B JP 52139738 A JP 55034654 B LU 76805 A1 NL 7701735 A SE 7701854 A	24-03-1977 27-12-1978 15-05-1978 16-06-1977 01-12-1981 14-07-1978 31-12-1982 16-09-1977 10-02-1986 21-11-1977 08-09-1980 06-07-1977 23-08-1977 20-08-1977
US 2001019734	A1 06-09-2001	US 6589584 B1 CA 2431880 A1 WO 02051250 A1 CA 2305900 A1	08-07-2003 04-07-2002 04-07-2002 16-10-2000
US 2001055642	A1 27-12-2001	US 6291009 B1 AU 7083900 A EP 1351583 A1 WO 0187086 A1	18-09-2001 26-11-2001 15-10-2003 22-11-2001
EP 1129626	A 05-09-2001	US 6355295 B1 AU 2477701 A AU 2477801 A AU 755396 B2 AU 6967100 A BR 0004240 A BR 0102199 A BR 0102288 A CA 2310296 A1 CN 1310957 A CN 1318315 A CN 1323547 A DE 1129626 T1 DE 1135993 T1 DE 1129629 T1 EP 1129626 A2 EP 1135993 A2 EP 1129629 A2 ES 2165827 T1 ES 2165340 T1 ES 2165341 T1 GR 2001300063 T1 GR 2001300064 T1 HU 0005045 A2 HU 0100922 A2 HU 0100923 A2 JP 2001346544 A NZ 509563 A NZ 510199 A NZ 510203 A NZ 520357 A NZ 520358 A NZ 520359 A	12-03-2002 30-08-2001 30-08-2001 12-12-2002 30-08-2001 02-10-2001 02-01-2002 18-12-2001 29-08-2001 05-09-2001 24-10-2001 28-11-2001 21-02-2002 18-04-2002 21-02-2002 05-09-2001 26-09-2001 05-09-2001 01-04-2002 16-03-2002 16-03-2002 30-11-2001 30-11-2001 28-02-2002 28-12-2001 28-12-2001 18-12-2001 26-11-2002 25-10-2002 25-10-2002 28-02-2003 28-02-2003 28-02-2003

INTERNATIONAL SEARCH REPORT

Internal	Application No
PCT/IB 03/00672	

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 1129626	A		NZ 520360 A	28-02-2003
			PL 345876 A1	10-09-2001
			PL 346197 A1	10-09-2001
			PL 346201 A1	10-09-2001
			TR 200103071 T3	21-01-2002
			ZA 200100536 A	18-07-2001
			ZA 200101638 A	30-08-2001
			ZA 200101640 A	30-08-2001
WO 0030663	A 02-06-2000	AU 1511300 A	13-06-2000	
		BR 9915693 A	14-08-2001	
		CA 2352510 A1	02-06-2000	
		EP 1143988 A1	17-10-2001	
		WO 0030663 A1	02-06-2000	
		JP 2003524610 T	19-08-2003	
		US 2003113390 A1	19-06-2003	